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THE
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☞See advertisement on last page.

Poetry.

THE SNOW DROP IN THE POOR MAN'S WINDOW.

It was a darksome alley,
Where light but seldom shone,
Save where at noon a sun-ray touched
Its little sill of stone.
Beneath the poor man's window,
Whose weary life was bound,
To waste in one dull, ceaseless task
The passing seasons round.

Spring's dewy breath of perfume,
And summer's wealth of flowers,
Or the changing hue of Autumn's leaves.
Ne'er blest his lonely hours;
He knew too well when Winter
Came bowing forth again—
He knew it by his fireless grate,
The snow, and plashing rain.

Pierced by the frost-winds beating,
His cheerless task he plied;
Want chained him ever to the loom,
By the little window side:
But when the days grew longer,
He stole an happy hour
To tend, within a broken vase,
A pale and slender flower.

How tenderly he moved it
To catch the passing ray,
And smiled to see its folded leaves
Grow greener every day.
His faded eyes were lifted oft,
To see the snow-drop bloom—
To him it seemed a star of light
Within a darksome room.

And as he gently moved it
Near to the sun-touched pane,
Oh! who can tell what memories
Were busy in his brain?
Perchance his home in childhood
In a sylvan valley lay,
And he heard the voice of the running streams,
And the green leaves' rustling play.

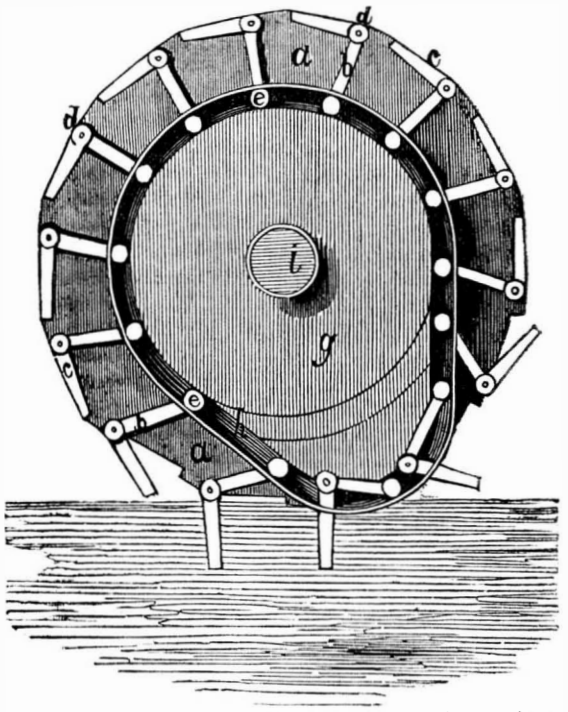
Perchance a long-departed
But cherished dream of yore,
Rose up through the mist of want and toil,
To bless his heart once more.
A voice of music whispered
Sweet words into his ear,
And he lived again that moonlight o'er,
Gone by for many a year.

Or but the love of Nature
Within his bosom stirred—
The same sweet call that's answered by
The blossom and the bird;
The free, unfettered worship
Paid by the yearning soul,
When it seems to feel its wings expand
To reach a brighter goal,—

An aspiration, showing
Earth binds us not her slave,
But we claim a brighter being,
A life beyond the grave.

The Rockville (Md.) Journal says that a merchant of that town sold last year $1,500 worth of sumac. The Journal advises the farmers of the County to gather it.

NEW PROPELLER.--- Figure 1.



This is a new propeller invented and patented by M. P. Classen, of London, and first noticed in Barlow and Le Capelain's Patent Journal. The invention relates to propelling boats from the stern, and he employs horizontal propeller shafts respectively attached to the pistons of two steam cylinders. At the ends of these shafts, which pass through stuffing boxes into a water tight casing are affixed two frames subdivided into 12 or more compartments, for the reception of an equal number of swing floats, which open one way to admit of but little resistance to the return stroke. These propellers, which move in a vertical line with the rudder of the boat, causes the swing floats when opposed to the water to shut and thus propel the vessel. The mode of reversing being the alteration in the direction of the float boards to the required direction. In constructing float wheels according to this invention, instead of applying float boards to hollow frame wheels they are attached to cylindric drums having suitable recesses formed in their peripheries for their reception.

Figure 2.

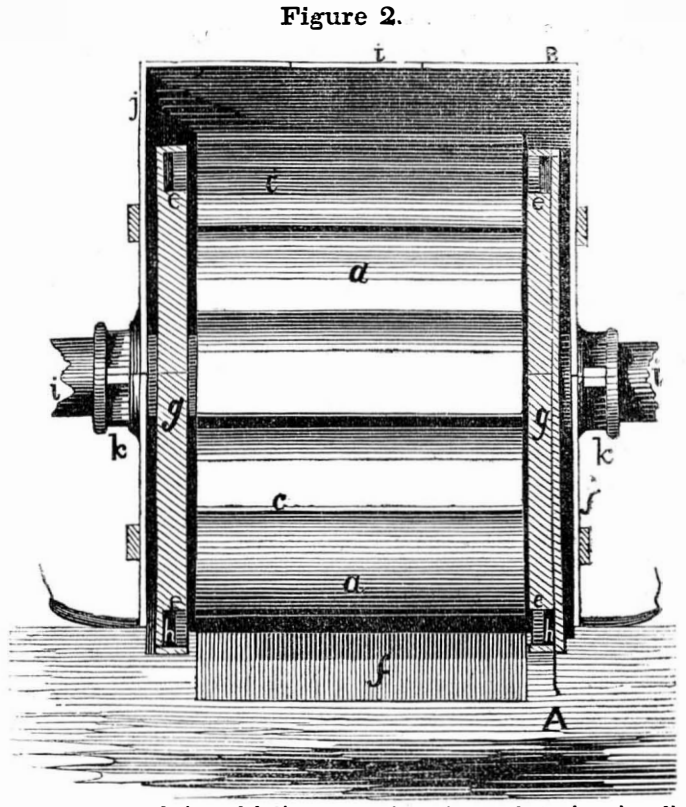


Fig 1. represents an end view of the improved wheel, and fig. 2 a sectional side elevation taken through the doted lines, A B. *a a*, is is the cylindrical drum which may be of metal or any other light substance, such as cork, wood, or otherwise. *b b*, are float motion rods, attached at right angles by the hinge or joint *d*, to the float boards *c c*. *e e*, are small friction rollers which turn on centres at the ends of the motion rods, *b b*, for the purpose of directing the position of the float boards; *g g*, are slotted bridles or guides, in which the friction rollers *e e*, travel: these rollers, when moving concentric with the drum *a a*, remain stationary, but when they diverge into the eccentric channel, *h h*, they cause the free use of the float boards to move outwards, till, on arriving at a point coincident with a vertical line drawn through the centre of the drum, they present the whole of their surfaces to the water, as seen at *f*; *i i*, is a crank shaft, passing through stuffing boxes, *k k*; *j j*, is a water-tight casing, enclosing the paddle wheels. Wheels so constructed are to be placed in the hold of a vessel or boat, on each side of the keel, transversely, and calculated to be driven by steam or other motive power engines.

RAIL ROAD NEWS.

N. Y. and Erie Railroad.

This great work, from the Delaware River to Binghamton, is now being pushed forward with vigorous resolution. The Binghampton Courier says it is still the expectation of the Directors to complete it to that place by the 1st of January next.

Reduction of Fares.

The associated Railroads in this State have reduced their through fare from Buffalo to Albany to $9,75; hitherto $12. When the Erie Railroad shall be in operation throughout, the central route will reduce their fares, and wish they had not deferred it so long.

Accidents by Railroad.

The boiler of a Locomotive exploded in Philadelphia on Thursday week, on Willow street railroad, near Schuylkill Eighth street. The Locomotive (the Simon Snider) was attached to a train of portable boats surrounded by several persons, who escaped almost by a miracle. The cause of this explosion was the same that has produced many similar disasters—a want of water in the boiler.

Ninety persons were killed and ninety-nine injured, by railroad accidents in Great Britain and Ireland during the six months ending June 30th. The total number of persons travelling by railroad in the same period was 26,330,492. The proportion of persons killed was one in 292,561 passengers, and of the wounded one in 265,964.

Reprehensible Conduct.

Several instances have occurred of late, in Massachusetts, in which passengers in railroad cars have been severely injured by stones or other missiles being thrown at them by boys as the train was passing. On Monday afternoon last an iron spike, weighing about three quarters of a pound, was thrown at the 4 o'clock up train from Boston, near West Newton, by a boy about twelve years of age. The spike entered the window while the train was under all headway, and grazed the head of a lady who sat next to it, but without doing her serious injury.

A man travelling eastward on the Utica Railroad, last week, who refused to pay his fare, was ejected from the cars by the collector at Oriskany. He gave way to his wrath by throwing a volley of stones through the window near which Hon. John C. Spencer sat, striking that gentleman on the head, inflicting a severe wound.

Such acts should meet with prompt punishment.

The Telegraph.

We learn that the New York and Philadelphia Telegraphic Company have abandoned the project of communicating with this City by means of wires sunk in the river. They have extended their line to the Highlands, where the wires can be suspended across the river at an elevation of 500 feet.

The Fate of a Canal.

New Haven papers are making merry over the destruction of the old canal, once the boast of Connecticut, but now, like a faded beauty devoid of intellectual or moral worth, it is thrown aside and neglected for the more useful railway. There is hardly a vestige of the old canal remaining.

The fragment of a mammoth tooth was recently found near Sulphur Springs, Alabama, weighing 80½ pounds. It is of a bluish cast, and in a petrified state, and when found was embedded in the earth with the grinding surface exposed. The teeth of the monster of which this is a part, must have weighed over two hundred pounds—its head several thousand. The animal, we suppose, was one of earliest inhabitants of Mississippi Valley, and was well calculated for traversing its majestic rivers, prairies and forests.

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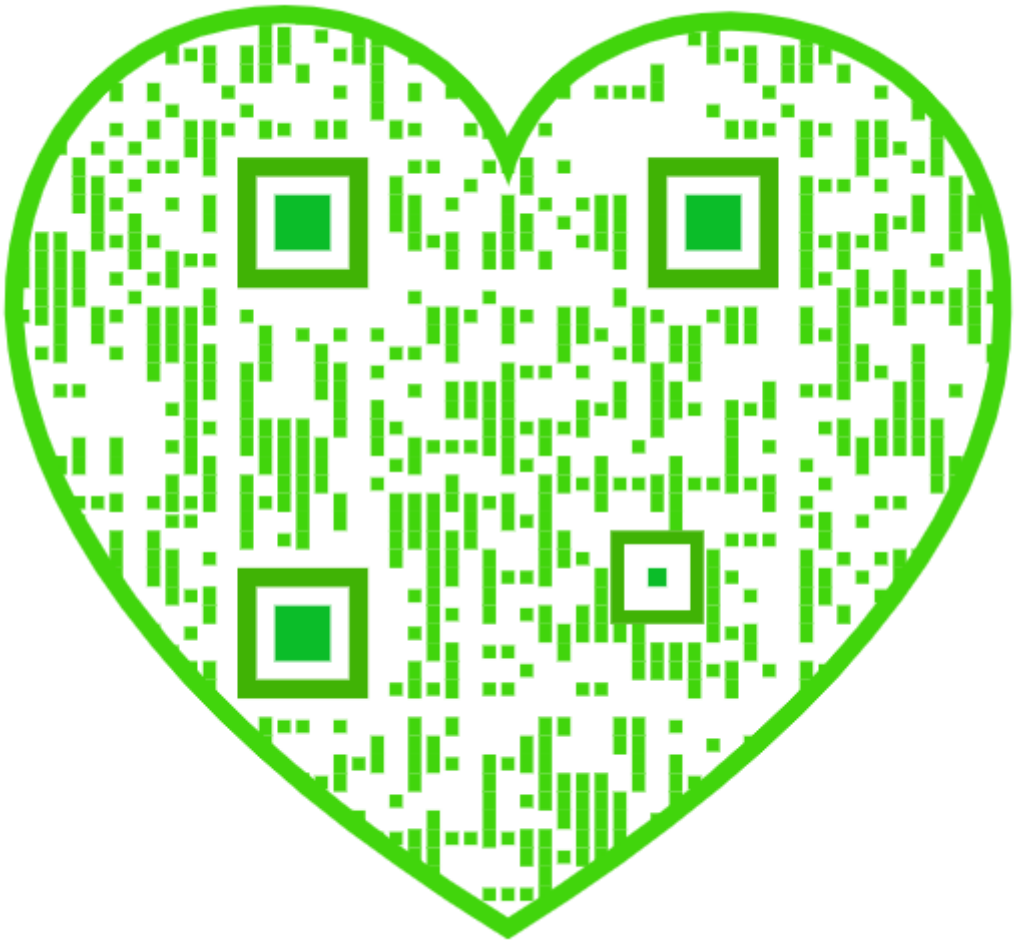

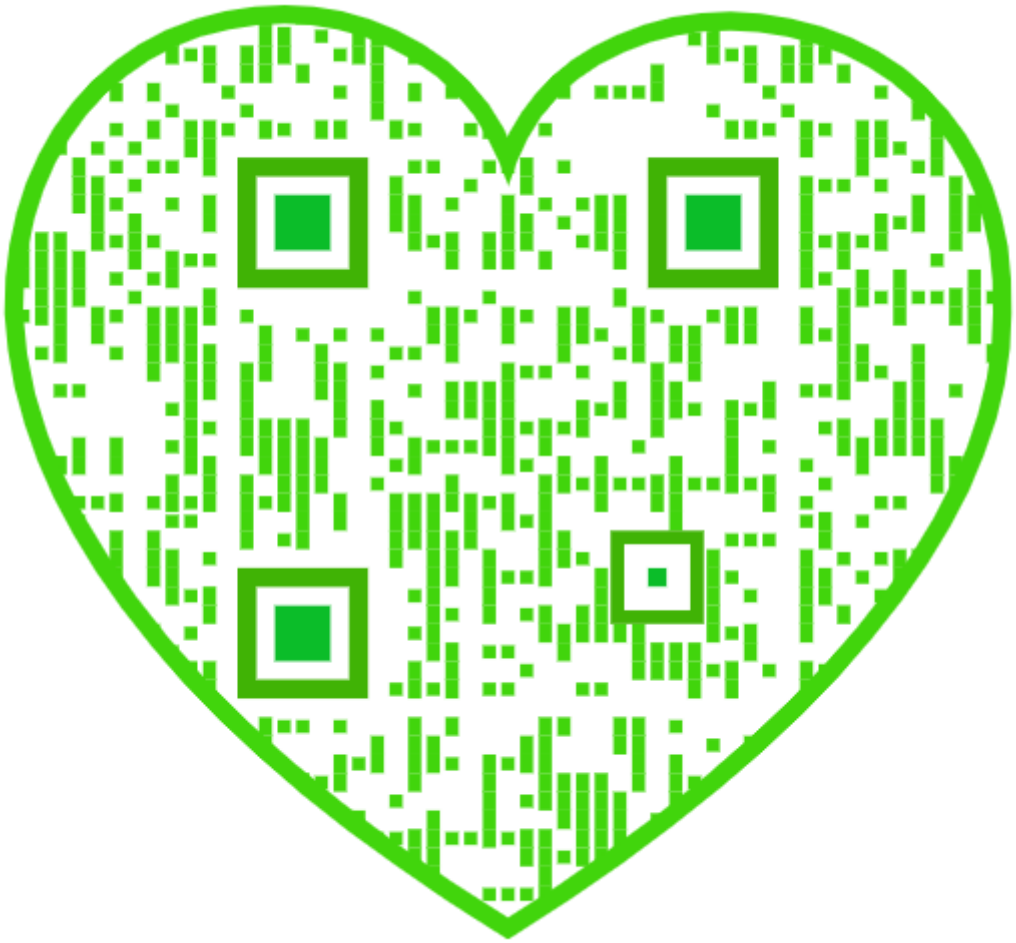

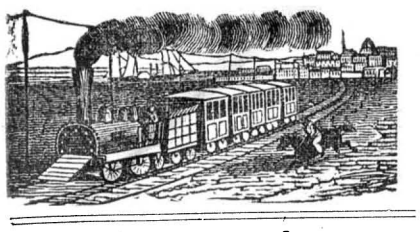

Foreign Correspondence.

New Kent Road, Surrey, London, September 8th, 1848.

Mr. Editor.—I am in the regular receipt of your valuable paper (through my father, in Cambridge, Mass.) and with your permission will add to the reply that you made your correspondent "G. E. of Philadelphia," in your paper of Aug. 19. Although I am an interested party I will endeavour to give it an impartial consideration. The French Sewing machine has the same detect as the Cambridge machine, only to a greater extent. For whilst the Cambridge stitch is pulled out with some difficulty the French, or Tambour stitch, is pulled out with the greatest ease, as those that understand the peculiarities of each stitch will readily perceive. The stitch, which is the tambour or chain stitch, is made with a hook instead of a needle, and is used only for purposes of ornament. The machine is very compact and simple, but in my opinion incomplete inasmuch as the cloth has to be presented to it by hand, thereby requiring both hands and one foot to operate it. I don't know how your correspondent can get one for there is not any for sale. At least there was not a few weeks ago.

I wish to say to your correspondent and others who feel themselves interested, that I expect soon to be able to submit to their inspection a Sewing Machine that will both stitch and sew in the same manner as is done by hand, thereby silencing those objections brought against the Cambridge and French machines. The machine will be extremely simple, not possessing one-half the complication of the others, the patent for which is sealed here. I don't think it will be of any use for you to ridicule John Bull about his patent seal, for the fact is John is *thick* upon some matters, and upon that seal he is decidedly *thick*. Elias Howe, Jr.

A Noble Act Handsomely Acknowledged.

The Common Council of this city have voted the freedom of the city and a gold box, with suitable inscriptions, to Frederick Jerome, the gallant sailor who saved so many passengers of the Ocean Monarch, at the evident peril of his own life. Jerome belongs to the port of New York, where his wife and family reside. He had, on a previous occasion saved a number of lives and when the catastrophe happened to the Ocean Monarch, he swam to the wreck and with his own hands lowered some fifteen or twenty helpless females into the boat. He was rewarded by a present of £50 from the Prince de Joinville and Duc d'Aumale; the Queen of England also presented him with another £50, and the Humane Society of Liverpool with a gold medal. This intrepid sailor reached this city a few days since in the ship New World, and the Common Council have appointed a special committee to wait on him with their handsome acknowledgment of his intrepidity and humanity.

"The star-spangled banner rejoices to wave,
O'er one so intrepid, so noble, so brave."

An Interesting Relic.

The venerable John Binns has proposed to the Philadelphia Councils to purchase an original portrait of George Washington, painted by Charles W. Peale, just after the battle of Trenton, when the great man was in his 46th year. This picture is the only one taken of him in contenental uniform and the back ground embraces likenesses of Knox and Mercer. The frame is of the oak of the frigate Macedonian, captured during the war with Great Britain by the United States.

In the course of the next month the Central (Michigan) Rail Road, will be completed to Niles, leaving 25 miles by stages to St. Joseph. Passengers then will make the distance between Chicago and Detroit, in 24 hours.

Hints to Gas Consumers.

As gas obtained from coal or oil has now nearly superseded every other kind of artificial light for both public and domestic purposes, its proper management becomes a matter of great importance. In the first place, the greatest care should be taken to prevent its escape into the apartments in which it is used; for as it forms, when mixed with common air, a highly explosive compound, resembling the fire-damp in coal-pits, both in constitution and properties, very dangerous accidents frequently happen from a neglect of this precaution. To this end the taps of the various burners, and especially of the main-feed pipe, should be turned so as to quite cut off all supply of gas. Should, however, the gas be found to have escaped, a light should never be introduced into the apartment until the upper sashes of the windows have been open some time, and every available way of exit provided for the dangerous mixture of gas and air then in the room. By neglecting this precaution a fearful accident lately occurred in London, whereby some lives were lost.

The next point claiming attention is the meter. To make our remarks on this subject the more intelligible, it may be proper to give a brief account of its construction.—It consists of an external gas chamber, in which there is a rotating chambered cylinder properly connected with the register wheels. Into the chambers of this cylinder the gas is delivered by the outer feed-pipe to be measured by the burners. Projecting from the front of the main chamber is a smaller one, provided with two screwtaps, one for the admission of water, the other for its emission. Water is poured through the former into the external chamber, and finds its way into the cylinder chambers, and, of course, rises to a height proportioned to the quantity poured into the apparatus. The second of the screwtaps above mentioned is used to regulate the height, and must, therefore, be withdrawn whilst pouring in the water. The form of the chambers in the rotating cylinder is such that the pressure of the entering gas on the water causes the cylinder to go round. This rotation communicates motion to the wheels which register the number of rotations, and, of course, the volumes of gas delivered at each rotation into the chamber from which the burners are supplied. Now, as the rotating cylinder is partially filled with water, it is obvious that its capacity for gas must depend on the height to which the water has risen in it. This capacity is estimated for each meter from a given height of water, and this is regulated by the emission screw tap as just stated. If this is not withdrawn whilst pouring in the water, the capacity of the chambers will be diminished by the rise of the water; and more gas registered than has been consumed. On the other hand, should there be too little water consumed, the light will be unsteady, and may suddenly go out altogether. We have thought it right to give these hints at the present time, as accidents are more likely to happen now than at most other seasons.

Potatoe Cheese.

In some parts of Saxony, potatoes of the best quality are dressed in steam, peeled, and reduced to a pulp. Five pounds of this are mixed with about ten pounds of sweet curd kneaded together, with the addition of some salt; after lying for a few days, the mixture is again kneaded, pressed into little baskets, where the superfluous moisture drains off and the cheese is then formed into balls, and dried in the shade. These cheeses are said to keep well, when dry, and their taste and quality improve with age, with the advantage that they generate no vermin.

Bogardus Flour Mill.

A singular building is about being put up at the corner of Duane and Centre streets, by Mr. James Bogardus, the inventor of the Eccentric Mills for grinding grain, drugs, &c. The foundation has been built, and it is now proposed to make the whole basement and four stories with the exception of the floors, of American Iron. The building, which is to be 25 feet wide and 89 feet 9 inches deep, is to be a manufactory and Flour Mill.

Morse's Air Distributor, for burning Sawdust, Tan, Fine Coal Dust, and Refuse Fuel.

We copy the following article from the Niagara Courier, which shows the merits of "Morse's Air Distributor from actual test."

This is deservedly one of the most important patents, relative to generating heat, ever obtained. It brings into use substances that hitherto were deemed worthless—and saves the consumption of valuable wood and other fuel. In this Village Mr. G. Reynale has introduced it in his large Gang Saw mill for cutting ship plank and sawing stone. He has two gangs of twenty saws for plank, and five gangs for stone—and says that since he removed his old grates and substituted Morse's, he has better steam and an abundance, from the sawdust, bark, chips and refuse litter, without a stick of wood, than he had before—though previously he burned a portion of the sawdust but with little effect, as it had to be dried.—He now shovels it into his fireplace as made from the logs drawn directly from the Canal. It certainly is a great and valuable affair, and as such we heartily recommend it to the country—every dollar saved in this way adds to the substantial wealth of our people.

The inventors and patentees, Messrs. L. Morse & Brothers, live in Athol, Mass. L. A. Spaulding, of Lockport, has the right of the State of New York. We notice in the report that a Silver medal was awarded at the late fair at Buffalo, by the State Agricultural Society, for this invention.

Holden's Dollar Magazine.

Praising Holden's Magazine now-a-days is as common as reading the newspapers, and each month we feel more and more impressed with the idea that it supplies a vacancy in our national literature never before filled. The October No. is fully equal to any that has preceded it and contains among other choice articles "Naumentenes an Indian Tale" "a Duel in Georgia," "Lawyer vs. Hunter," and a fine Sketch of Doctor Cox the eccentric Clergyman of Brooklyn. The engravings are as usual excellent specimens of art. We see announced for the next No. of the Magazine "*the most extraordinary work of the age.*" It is a novel or romance containing letters from all the distinguished Authors, Poets and Politicians of the present day in the fac similes of their autographs. This feature must be invaluable to subscribers. Holden's Magazine is published at 109 Nassau st. New York, at only $1 per year. See advertisement.

The Census of France.

The census of France taken in 1846 shows that since the previous census, in 1841, the population had increased 1,170,000, or at the rate of 234,000 per annum. The average population of the period being 34,865,000, annual average increase appears to be 1 on 149, which would cause the population to be doubled in 103 years; but, in point of fact, the increase was not so great, some errors having been made in the census of 1841. The returns, drawn up with the greatest care, show that the excess of births over deaths is annually only 182,000, or 1 in 190, which would only cause the population to be doubled in 132 years. From 1791 to 1840, it is calculated that the population increased from 24,000,000 to 31,000,000. In 1721, the total production of wheat in France was about 47,000,000 hectolitres, or, after deducting for sowings, 1 hecto. 65 cent. per inhabitant; and in 1840, it amounted to 70,000,000, or 2 hecto. per individual. The quantity of ground cultivated in wheat is about the same as it was before the revolution, from which it results that the increase of production is owing to improvement in cultivation. Other agricultural products have also greatly increased; potatoes, for instance, were scarcely in use before the revolution, and the cultivation of vegetables was not so extensive; so that it appears that the increase in food has been much greater than in population.

The number of deaths in this city last week was 282. Their places of nativity were as follows: United States, 211; Ireland, 44; England, 5; Germany, 16; France, 2; Switzerland, 1; British Possessions in North America, 2 unknown, 1.

Pencils.

The pencils manufactured by A. G. Fay of Concord, Mass. we are glad to see are finding their way fast into the market, and will no doubt yet supercede the foreign, which has long carried the sway. Home industry should certainly be encouraged when its produce is as cheap and good as the foreign, and the Yankee made pencils of Mr. Fay, are certainly inferior to no others, and really superior to many. Those who want good pencils, mechanics, artists and accountants, should mind Fay's improved Graphite Pencils. They are hard without brittleness and can be pared with a knife like the strongest material in nature.

A New Suspension Bridge.

The Niagara Chronicle, of the 14th, says it understands that the project of constructing a suspension bridge across the Niagara, at Queenstown, is again revived, and this time with every prospect of being carried out. Mr. Ellet, the engineer of the bridge at the Falls undertakes to construct it for $10,000, and will himself take one fourth of the stock. This leaves $7,500 to be subscribed for—half of which has been already taken upon the American side, and a large portion of the other half on the Canada side of the river. If no unforseen difficulties arise, the bridge will be ready for use by September of next year.

Maryland Institute for the Promotion of the Mechanic Arts.

We learn that the committee of arrangements have secured the services of J. B. H. Latrobe, Esq. for the purpose of delivering an oration before this important institution, during the fair which is to take place at Washington Hall on the 31st of October. We also learn that the prospects thus far, for a grand demonstration of the advancement being made in the Mechanic Arts are highly flattering, and afford great encouragement to the board of managers, under whose auspices the fair will be conducted.

Theft of an Ancient Manuscript.

An ancient illustrated manuscript volume was stolen from the library of Georgetown, (D. C.) College, about the 11th or 12th Sept. It is about 600 years old, is of fine parchment, 4 by 3 inches, and some of its pages decorated with rubrics and figured letters, and contain prayers and portions of Scripture in the form of the Roman Breviary. The reverend faculty are very anxious for its return.

Drunkenness among the Hindoos.

It is a lamentable fact that many of the Hindoos, (who were formerly a temperate people,) of all ranks, are learning to drink, and are fast becoming drunkards. This fact is a sufficient ground to lead every Christian to examine, with anxious solicitude, the connection between the drinking usages of Christendom, and the prospective ruin of this interesting people.

Christendom is like a ruler that seeks after the prosperity of his people, but neglects to govern his own family.

A Metropolis of Monkies.

Bungalore in the East Indies is on one side completely hidden by a dense grove which stretches around it and is penetrated at different points by roads leading to the gates. This grove is a perfect metropolis of monkies. They swarm in thousands, chasing each other on the boughs, and grinning hungrily at every one who passes with any eatable. They are a constant pest to every housewife in the town, discovering unsuspected passages to their stores, forestalling the meal, and making a hasty retreat.

In England in the early part of last month, ten men, (eight of whom have left widows, with twenty nine children,) and four boys, were killed by an explosion of fire damp, at Murten Colliery. The men were working with naked candles.

A large bale rope and bagging manufactory in St. Louis, Mo., has stopped operations.—The cause is unprofitable business—the price too low for the manufactured article.

A cotton factory in Georgetown, D. C. has stopped from the same cause as the St. Louis bagging factory.

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For the Scientific American.

Incrustations in Steam Boilers.

Sir.—In No. 50 of your valuable journal, I find an article upon "Incrustations on Steam Boilers," by R. Bartholomew. The labor of the article seems to bedirected against Mahogany dust which was patented some time since as a preventive of deposits and incrustations on steam boilers by Samuel D. Anthony and Daniel Barnum. Of Mr. Bartholomew I know nothing. But on reading the article with its *italics* and *cants* at *mahogany dust* and *exhausted dye stuffs* as a *patent*—the idea is presented to the mind, that he imagines himself to be witty in attempting to ridicule the "profession" that mahogany dust was a useful as a preventive of incrustations—and also that he belongs to that class of men (which are far too numerous) who are incapable of appreciating an honest effort at improvement—even where it is successful, and who delight in the want of success—acting upon the principle that it is easier to pull down than to build up. If these traits do not belong to Mr Bartholomew he has done himself injustice in giving the article the sanction of his name, for whatever may be his standing as a man or engineer it is no disparagement to him to say that Mr. Anthony at least is his equal in respectability and unpretending merit, in both respects. An honorable and manly criticism is commendable and does no injustice but often stimulates to greater exertion, where success is wanting—but an attempt at wit at the expense of truth, is most contemptible, and should consign the author of it to his proper level. I would fain believe that a penchant for notoriety tinctured with a little vanity prompted Mr. Bartholomew to make the exhibition of himself rather than to believe him guilty of a wilful perversion of the truth, when he says "Mahogany dust, which was ONCE to be the panacea for all incrustations whatever, has utterly failed to confer a single anticipated benefit." So far from the truth is it that it has utterly failed to confer a single benefit, that in no instance (known to me at least,) has it been properly used without conferring decided benefits in preventing incrustations (not stopping leaks.) That mahogany dust may have been occasionally used without any apparent benefit, by engineers possessing similar feelings with him, without the requisite information for its successful use is not doubted, but that it has been *properly* applied without benefit is confidently denied, upon the positive practical knowledge of more than one. I instance the last case which has come to my knowledge. The "Crescent City." Capt. Stoddard was requested by Mr. Anthony to make trial of it on his last voyage, and the result was, according to Captain Stoddard's voluntary statement and from his own examination of the boilers, that the scale was all loosened from the surface of the iron under its use—that he was highly pleased with it. I refer to this as a recent case in a sea steamer running to Havana and New Orleans, as the water used could not be worse. That Indian meal and potatoes are useful for stopping leaks is not doubted, and the reasons for it are correctly given by Mr. Bartholomew, to wit, they *settle and harden*—but unfortunately for him this proves too much—for the fact of this settling and hardening proves their tendency to precipitate and increase the difficulties arising from deposits and incrustations, hence from the "practical evidence of more than one," their use for the *prevention* of *incrustations* have "utterly failed to confer a single anticipated benefit."

That mahogany dust is inferior to potatoes and meal for stopping leaks is readily conceded, for its tendencies are to prevent the deposits of carbonates and salts, keeping them in suspension until they are blown off by blowing water from the boiler, which is of course necessary to be done occasionally, although much less frequently with than without the dust.

To realize the "anticipated benefits" from mahogany dust several things are necessary to be observed, and the first is, care should be taken to obtain pure mahogany, as other kinds of foreign wood do not produce the same beneficial result— and in the second place, the boiler should be seasonably replenished, for which purpose conveniences are necessary for its introduction underway—the proper time and quantity of water to be blown from the boiler should be understood, else the dust may be thrown from the boiler before it has produced its effect, &c. And I venture the assertion and without fear of successful contradiction, that any, and all engineers, (who have used mahogany dust and who are ready to give evidence that it has failed utterly to confer a single anticipated benefit,) have not observed the necessary requisites for a proper application and test of its merits, and all such are respectfully requested to make a thorough and fair trial, and if "a single anticipated benefit" cannot be obtained, they will most certainly confer a benefit, or at least a favor, by informing me of it.

Daniel Barnum.

New York, Sept. 3, 1848.

American Association for the advancement of Science.

This association of distinguished men assembled last week, on the 20th, in Philadelphia, and we here present some condensed extracts of their transactions.

MINERALOGY.

Dr. P. A. Brown in his paper stated that a mineral (mullicite) found in Gloucester Co. N. J., was described in an imperfect manner by Dr. Thomson in his first volume on Mineralogy, owing, no doubt, to his not possessing sufficient specimens. Dr. Browne observed that, having in his cabinet a number of them which exhibit the mineral in all its phases he was induced to point out some of its peculiarities, and to endeavor to show its origin.

Upon examination, the mineral was found to be phosphate of iron. From a comparison of these specimens it is apparent that the "congeries of small needles" described by Dr. Thomson, as radiating from the centre of the fossilized Belemnite, are *not true crystal* of the mineral substance (Di-phosphate of iron) as he supposed; but are due to the *former structure* of a portion of the Cephalopedes, an animal fossil found at Mullica Hill. The iron was disseminated in the ferigenous sand and the animals after dissolution surrendered their phosphoric acid, it combined with the iron and water, forming the di-phosphate of iron, and as the operations of decompositions and transmission were gradual, it is natural that the new mineral should take the structure and form of the former animal substance.

Phillips, in his "Mineralogy," speaking of blue iron, (phosphate of iron,) says that in Liberia it is found in fossil shells, but he does not describe its crystalliztion.

TIDAL CURRENTS.

A curious paper was presented by Professor Pierce from Lieut. Davis, U. S. N. on the Geological Action of the Tides. The communication was prefaced by a few remarks on the general principal of his theory, the object of the paper being to exhibit the action of the Moon, as tending to alter the figure of the Earth.

By a study of the tidal currents on the North-eastern Coast of the United States, Lieut. Davis has been led to the discovery of a connection between the ocean tides and currents, and the alluvial deposits on its borders and in its depths. The connection is thus traced: the direction and velocity of the tides at any place where these deposits exist—that is where the ocean is freighted with matter held in suspension—decides the form, amount and locality of the deposits.—The direction of the tides is different at different places, but the result of their action is to produce certain uniform or similar formations, and it was the observation of this which led Lieut Davis to the introduction of a Tidal Theory into Geology.

The tidal current in Nantucket comes freighted with sand, and as it strikes the island it is deposited. Yet the current which is acting there all the time is not only depositing, but it is also taking away—so that, all the time flowing in every direction, and universally distributed, not very much is accumulated in any one place. The deposits are nearly equally made at various points.

The extremity of the Island has been supposed to be formed by deposits coming from the Island itself (i. e. by the shifting influence of the changing current)—but this is shown not to be the case; that portion of the Island being formed solely by the tidal currents.—As an instance of the force of these currents, Prof. Pierce cited an instance. A short time ago, a ship was wrecked at one end of the Island, and the Keeper of the Lighthouse at the other end actually supplied himself with fuel from the coal which was originally deposited with the wrecked vessel. The coal was brought clear round the Island and deposited at its farthest extremity, by the mere force of these currents. Bricks have in the same manner been carried, and at Siaconset there is now standing a chimney actually built from bricks which were carried all round the Island in the same way.

Regarding the theory of the Tides advanced by Lieut. Davis, some discussion was excited. Mr. Redfield opposed the views entertained by Lieut. D. He reasoned long and well that the deposits of sand are not so much owing to tidal action as to the direct agency of the waves. Other gentlemen thought, some one thing, others another, and nothing was agreed upon definitely.

Dr. Dickenson related a remarkble incident, where at the Island of Galveston in 1839, a vessel from New Oleans was wrecked (at the South end) with a considerable amount of specie. The officers of the Custom-House took measures to recover the valuable cargo and in a very little time the workmen reported the vessel nearly covered with sand. A few weeks after, and at the other end of the Island—some 28 miles or thereabouts—some fishermen brought up some of the doubloons. They were arrested and imprisoned on a charge of robbing the wreck, their protestations of having really found the gold at so great a distance not being credited for a moment, till scientific research convinced the authorities that the metal was really carried to that distance, of course by the force of the current. An instance of the way heavy bodies are transported.

AMERICAN FISHES.

Professor Agassiz presented quite a number of papers, and remarked that it had been his good fortune, during the past Summer, to have opportunities, in company with several friends—to explore the Northern Lakes, and more especially Lake Superior. His attention had been called particularly to the Fishes, a subject always of very great interest to him, and of which he had acquired at the Lakes some new and valuable knowledge. His object was to ascertain their geographical distribution and to satisfy himself whether they were indiscriminately distributed through all these Lakes, or whether there were differences in the localities where found.

On carefully comparing, he found that the distribution is entirely different—that particular families are in some, and other families in another part, and that they never leave their peculiar locality. He finds that there are families in Lake Huron which are not in Lake Superior, and some in Lake Superior which do not move down into the lower lakes, although the communication between them is always open and easy. The Fishes, then, of the several Lakes, are very different—another illustration of the great law of distribution and localization. Prof. A. considers that these Fishes originate where they are found; and it is a singular fact that they are generally located in very similar positions with the fishes of Europe—yet, although they so agree generally with the European varieties, they are greatly different in zoological characteristics. In Lake Huron there are many of the Perch family—none in Lake Superior and so on.

It is well known, from geological data, that North America is the oldest continental land upon earth. The general ancient character of this country is deeply impressed upon the mind of the active geologist, and he [Prof. A.] could not help feeling it when exploring the Northern shore of Lake Superior. This is interesting information. It is not remarkable that animals now exist which are old fashioned in their external zoological character—and that they should be of the same type with animals long since considered extinct. It is North America where the Garpikes live, and is the garpike the only representative of the periods when that fish only lived?

He had found in Lake Superior a new Fish! with spines upon the aperaular bones, and all the scales hard and serrated, and, what has never been before observed in hard scaled fishes, it has, like the Salmon, an adipose or fatty fin.

Here, then, upon Lake Superior, we have these old-fashioned fishes upon this old soil. He considered it important to trace our living animals in their relation to the Fossils, as also their geographical distribution. This country was undoubtedly first dry land, and the animals preserved seem to remind us of the olden ages.

Mr. Redfield asked if the White Fish of the Lakes was not common?

Prof. Agassiz replied, it is. He mentioned that he had collected 33 Fishes on lake Superior, and exhibited drawings of several.—About a dozen of them are entirely new varieties.

British.

At the late meeting of the British Association for the advancement of Science, Mr. J. Palmer Budd read a communication on the advantageous use of the gases in some of the blast furnaces in Germany. It appears that the gases which are evolved from these furnaces escape at a temperature which is about the melting point of brass. In the iron works at Ystalyfera, where the iron is melted by the use of anthracite coal, advantage has been taken of this in a most ingenious manner, by an arrangement, which is in its character exceedingly simple, but somewhat difficult to describe. The hot gas is led off into another channel by means of a strong current generated through a chamber and air-way from a point just below the iron furnace. It is conducted, very little heat being lost in the passage, under the boiler of a steam engine; and it is found to be at a sufficient high temperature to heat the boiler without the consumption of any fuel whatever. Hence an immense saving is effected. Although only one furnace and one boiler has hitherto been adapted to this purpose, it is found to effect a saving of $1,750 a year. We may consequently expect that when the experiment is further extended and more of the furnaces so arranged that this heat may be economized and employed for numerous useful purposes to which it is applicable in a large establishment, the saving will amount to many thousands annually.

This is a subject worthy of the attention of our iron manufacturers and some of them may dispense with their water wheels and make a saving by the operation.

Microscopic Discoveries.

Dr. Carpenter noticed particularly the formation of the great beds of chalk, several hundred feet thick, which substance is composed entirely of minute shells, that are invisible to the naked eye. The different cellular structure of shells, and the peculiar organization of the teeth of animals, Dr. Carpenter could trace, even in the invisible fragment of a shell or of a tooth, the class, and sometimes even the species, to which the fragments belonged. Refering to the general cellular structure of all organizations, he says that this structure could be seen alike in the leaf, in the bones, in the muscles, and in the blood. That all life seemed to originate in single cellular developements, but, notwithstanding this apparent similarity in the original cells, there is an inherent, though as yet undistinguishable difference, which determines the structure of the plant and of the animal. The bodies of the animalcules which inhabited the shells composing the chalk are still enclosed within them, being the mummies of a former world.

Cholera Liquid.

When persons experience the first symptom of Cholera they should resort at once to the following remedy, which every one can prepare and use with safety. Take gum camphor, gum opium, African cayenne, and oil of cloves, each one ounce, Hoffman's anodyne liquor, one pint. Shake up the ingredients frequently, in a bottle, and in ten to twenty days, filter through paper. Dose for adults, 30 to 60 drops every second, third, or fourth hour, until the stomach and bowels are relieved. It should be taken in a wine glass full of water.

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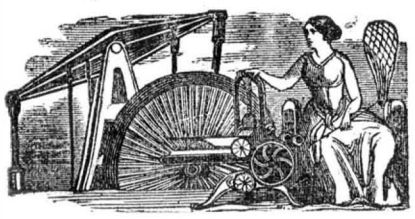


New Inventions.

Novel Mode of Propelling Steamboats.

One of our exchanges says that " the inventor of a new mode of propelling steamboats, different from the paddle wheel, which in sea vessels is so liable to accident, and in government vessels may be readily disabled, has left us a notice that he intends to apply for a patent for what is considered by him an important application of *steam* and *water* power." The method is this. A cylinder is placed either vertical or inclined in the interior of the vessel protected from shot and storms, " to which force is given by an endless screw also within the cylinder to act upon the water in which the vessel is afloat, so as to give her a forward motion equal to the force with which the water is driven through the cylinder, the portion of the cylinder from which the water escapes being always submerged."

All we have got to say regarding this invention is, that the inventor would save both time and money, in becoming better acquainted with the principles of propulsion.

Chloroform a substitute for Steam.

On the twenty second of last month a committee, appointed by the Academie des Sciences Paris, went to the establishment of M. C. Beslay, to witness a trial of a discovery made in the applicaiion of chloroform as a motive power in machinery. It will be recollected that the Minister of the Marine had an engine constructed for trying ether as a motive power. This engine was found to act well, and afford a considerable saving in fuel, but it was rejected on account of the inflamabillity of ether, which rendered it too dangerous for use in steam-vessels. Lieut. Lafond, of the navy, however, studied the nature of chloroform, ascertained that it was capable of producing a great motive power at a saving of 50 per cent., and that no danger is incurred. The experiment is said by our exchanges to have been completely successful.

It is our opinion that it never can be successful to compete with steam. The ether engine was boasted of as being " a new discovery that would revolutionise the whole science of mechanical propulsion." It has been laid on the *upper* shelf, and so will chloroform.

Improvements in Wrought Iron.

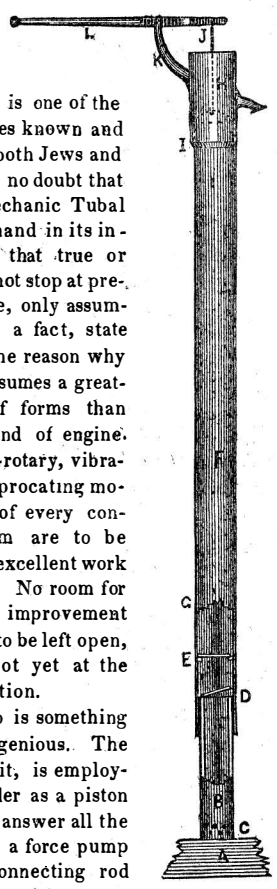
Take scraps of wrought iron and melt them in a cupola furnace with a soft fan blast, or use a reverberatory furnace, as for melting pig iron. After being melted, it is poured into moulds, and is very hard and brittle. After this it is put into an iron box, if a small quantity is wanted, surrounded with bricks, iron ore and charcoal dust being placed between the box and the bricks, and the whole submitted to a degree of heat to restore the malleability of the iron. A trial bar is used to be withdrawn from time to time to ascertain the degree of malleability to which the mass has obtained. For making articles which do not require to possess the density and texture of wrought iron alone, mix therewith cast iron in various proportions, according to the nature and requirements of the article, taking care that the proportion of cast iron, in no instance exceeds the weight of the wrought iron. In making articles which require to take the nature and temper of steel, mix with the wrought iron, steel in various proportions, according to circumstances—the proportion of steel never exceeding the weight of wrought iron ; then pour the molten metal into moulds and subsequently submit it to the annealing process in the manner before described.

The annealing may also be performed without the iron box by simply covering the metal with the ore and charcoal dust in a proper kiln.

Coke versus Diamond.—An Important Discovery.

Mr. James Nasmyth, the inventor of the steam pile driver, of Bridgewater Foundry, Patricroft, England, has tested as it were, and proved the fact, of the identity of diamond and coke, by the discovery that the minute laminated crystals or crystlets of coke are capable of cutting glass with the true diamond clearness of cut, or without merely scratching. No other setting too is necessary to prove this fact, than the crumbling consistency of the coke itself in mass ; so that a fragment of coke, switched at random across a pane of glass in the sunshine, is sufficient to exhibit not only the depth of the clear cut, but the prismatic colors in all their purity and beauty Ground to impalpable powder, Mr. Nasmyth, as intimated in the Mining Journal has found that coke constitutes what we may call the true " diamond paste" for sharpening razors —probably, indeed, if we may venture to say so, the only secret of the diamond pastes so largely advertised, if they merit even so worthy a supposition. The adamantine properties of black oxide of manganese, and its peculiar affinities, induced an ingenious chemist to suggest its strong analogy to carbon, is it possible that it too, when in fragments, much more firmly crystalline as it is in mass than coke, may cut glass with practical facility.

Dodge's Balance Pump.



The pump is one of the oldest engines known and used among both Jews and Gentiles, and no doubt that old handy mechanic Tubal Cain had a hand in its invention. Be that true or not, we will not stop at prese to argue, only assuming it to be a fact, state that this is the reason why the pump assumes a greater variety of forms than any other kind of engine. Rotary, semi-rotary, vibrating and reciprocating motion pumps of every conceivable form are to be found in the excellent work of Ewbank. No room for novelty or improvement would seem to be left open, but we are not yet at the end of invention.

This pump is something novel and ingenious. The principle of it, is employing its cylinder as a piston and lifter to answer all the purposes of a force pump without a connecting rod or plunger, in a very simple manner. A, is the foundation (a stone,) on which the pipe B, rests in the cistern. C, is the basket of the pipe. D, is a valve on its upper part. F, is another pipe, and if we suppose the lower one 30 feet and the upper one 70 feet, it will make the cistern 100 feet deep. The upper pipe laps over the lower the length of a stroke or a little more. The junction is surrounded with a stuffing box or collar, and the two pipes are therefore just the length of a single one, with only the length of stroke of difference. E, is a valve in F, the upper pipe, and fixed in the said pipe at such a distance above D, that the butt of one will not strike the top of the other when working. G, shows a break of the pipe as displaying a section view. I, is a collar surrounding F, and H is the reservoir in the inside of which the pipe F, moves up and down, as seen by the dotted lines connected with a small rod J. L, is the lever or pump handle and K, the fulcrum. When the air is exhausted from the lower tube, the water will rise to its top, 30 feet, by the common pressure of the atmosphere, and throwing open the valve D, will enter the intermediate chamber between the two valves in the pipe F. When therefore F is depressed, D closes and E opens, letting the water into the upper pipe, and when it is lifted up by the lever (when accumulated) will be discharged through the spout, thus combining both the pressure and lifting pump, without the use of a piston and connecting rod, excepting the short one at the top instead of one 70 feet long.

When treating of pumps, (an article on which might profitably be greatly extended,) we would correct a very common and wide spread error regarding the common pump as constructed to lift water over 30 feet high — It is generally supposed that water cannot by any, except by a force pump, be lifted over 30 feet high. This is wrong. We have seen a common pump lift water 100 feet high.— How was this done ? Simply by adding 170 feet of pipe to the common pump. Every stroke of the plunger brings the water above the centre valve, which closing prevents the water getting back and thus accumulating every stroke above the piston at last fills the 200 feet of pipe and discharges every stroke through the audit. There are mines in England 150 fathoms deep which are kept free from water by the pump described. Others are drained by a combination of a common pressure, and a tier of force pumps, all worked by one huge rod, very clumsy and expensive.

For most purposes to which a lifting pump or forcing pump is used to raise water as high as 160 feet, we think that this pump of Mr. Dodge is the best that we have seen. It is so simple and cheap. No piston nor connecting rod, and all the difference of expense from a common pump is just the lap of the pipe and an extra valve. It must commend itself universally. It could well be applied to the pumping of the Dry Dock in Brooklyn. Some may object to the great weight of the pipe to be lifted at every stroke, as well as the water, but this is no objection at all, as a balance weight on the end of the handle will act as a counterpoise, and then the depressing of the pipe is altogether a different thing, as the pipe F tends to the centre of gravity and assists to overcome the resistance of the water in the pipe by the water coming through the valve E, from the chamber.

Nehemiah Dodge, Esq. No. 634 Broadway, this city, is the inventor, and has taken measures to secure his unique and beautiful Yankee invention.

Double Headed and pointed Finishing Brad.

This cut represents a new kind of Brad manfactured by a very ingenious machine by H. S. Sill, at the corner of Reed and Elm street, this City. Its form enables it to be driven without turning in the wood and it goes through a board without splitting the under side. It also drives into hard wood without boring and is stiffer than the common Brad. It is but recently that this machine was put in operation although invented some years ago, but got into the hands of speculators. A machine will likely be exhibited at the Fair next month, when those who are interested in improvements will see it in operation.

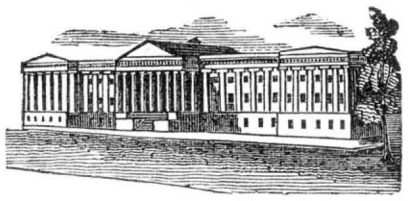
An old Revolver.

At the " Cadets Fair" lately held in Cincinnati an old German musket was exhibited amongst other things ; it was said to be 175 years old, and was provided with 4 revolving chambers, exactly similar to Colt's revolvers. The bayonet is about 8 inches long and shaped like a cutting knife.

There are many other modern inventions older than this musket.

New War Engine.

An exchange says that the French Government has adopted a new invention in the army, called a moveable barricade, made of solid oak, lined with sheet iron, with holes for muskets. It is moved upon wheels, and is an effectual shield to the soldier in a street fight, where the usual barricade is used. No one will fail to perceive that this is an old invention newly vamped up. The same moveable barricade was employed in Asia a thousand years before the Christian era.



LIST OF PATENTS

ISSUED FROM THE UNITED STATES PATENT OFFICE,

For the week ending Sept. 19, 1848.

To James K. Howe, of New York City, for improved theory of constructing Vessels Patented Sept. 19, 1848.

To Thomas B. Smith, of Philadelphia, Pa., for improvement in Refrigerators. Patented Sept. 19, 1848.

To Henry A. Stearns, of Cincinnati, Ohio, for improvement in sizing and drying Cotton Batting. Patented Sept. 19, 1848.

To Lewis Kirk, of Reading, Pa., for improved Steam Hammer. Patented Sept. 19, 1848.

To Anthony H. Austin, of Baltimore, Md., for improvement in Cream Freezers. Patented Sept. 19, 1848.

To Charles H. Van Dorn, of St. Louis, Mo. for improved apparatus for rotting Hemp. Patented Sept. 19, 1848.

To Samuel Bentz, of Boonsboro, Md., for improvement in hulling wheat preparatory to grinding. Patented March 4, 1848. (Antedated.)

To James M. Evarts, of New Haven, Conn. for improved Window Sash Fastener. Patented Sept. 19, 1848.

To E. H. Penfield, of Middletown, Conn., for improved Metallic Grummet. Patented Sept. 19, 1848.

To Charles Gifford, of Braintree, Mass., for improvement in preparing Shoe Pegs. Patented Sept. 19, 1848.

To Henry G. Hall, of Kirkersville, Ohio, for improvement in Posts for Telegraph, &c. Patented Sept. 19, 1848.

To Christian V. Queen, of Peeksville, N. Y. for improvement on Queen's portable Forge. Patented Sept. 19, 1848.

To John W. Phelps, of Boston, Mass., for improvement in Spino-abdominal Supporters. Patented Sept. 19, 1848.

To John Maxson, of DeRuyter, N. Y. for improved Door Spring. Patented Sept. 19, 1848.

To Henry Van Dewater, of Reading, Pa., for improvement in Shutes and Water Wheels. Patented Sept. 19, 1848.

To John G. Hull, of New York City, for improved method of attaching Tillers. Patented Sept. 19, 1848.

To Gustavus A. Nicolls, of Reading, Pa., for improvement in Locomotives. Patented Sept. 19, 1848.

To John Young, of West Galway, N. Y. for improvement in Washing Machines. Patented Sept. 19, 1848.

To A. Lyman and M. W. Baldwin, of Philadelphia, Pa. for improvement in Fountain Pen-Holders and Nibs. Patented Sept. 19, 1848.

To Reuben A. Holmes, of New York City, for improvement in Harness Buckles. Patented Sept. 19, 1848.

To Rhodolphus Kinsley, of Springfield, Mass. for improvement in Locks and Escutcheons. Patented Sept. 19, 1848.

To Harvey Law, of Wilmington, N. C. for improvement in machinery for planing Rived Staves. Patented Sept. 19, 1848.

To Nathaniel Waterman, of Boston, Mass., for improvement in Refrigerators. Patented Sept. 19, 1848.

To Henry L. Pierson, assignee of John Crum, of New York City, for improvement in the Screw Threading Machine. Patented Sept. 19, 1848.

To Thomas Glasco, of Wilmington, Del., for improvement in Saddle Trees for Carts — Patented Sept. 19, 1848.

DESIGNS.

To A. Cox & Co assignees of G. W. Ring and J. Crandall, of Troy, N. Y., for Design for Stoves. Patented Sept. 19, 1848.

To William Jackson, assignee of S. W. Gibbs, of Albany, N. Y., for Design for Cooking Stoves. Patented Sept. 19, 1848.

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NEW YORK, SEPTEMBER 30, 1848.

Scientific Associations.

The American Association for the advancement of Science has been sitting in Philadelphia during this and part of last week. Some of their proceedings will be found on another page, and will be of interest to many of our readers. We are proud and happy to see such associations among us—they do much for the advancement of civilization. In Britain there is an association of the same kind which has done wonders not only in advancing science, but in elevating man—by bringing together eminent men from all nations, and spreading among them a generous feeling to one another—making them feel that men of science are the property of the whole human family. Our American Association has the same broad and noble views and objects. We see that Professor Agassiz, an eminent foreigner was among the most conspicuous of the members. That is right. We would like to see America the centre of the scientific world and we will live to see this, we hope. Our people have just one course to pursue to bring about this desirable object, and that course is, the encouragement of men of genius and worth, men of solid, and not superficial attainments. In a few instances, we have honored men of literary and men of scientific attainments, but the cases are few and far between. France above all countries—much as has been said against her—has always honored literary and intellectual worth. Her philosophers, her literati, and men of science, have always been honored and encouraged. No other nation can say this much, and perhaps no other nation is more blameable than our own free and happy land, which above all others should be distinguished for the encouragement of science, and honoring the worthy. Instead of doing this, we have generally pandered to the anti-liberal spirit of partisan warfare — This should not be.

Among all the many good associations for which our country is distinguished, our eye has looked in vain for one that might refresh many of its weary wanderings—that Association is one of practical mechanics, engineers and artists, for the promotion of the useful arts. A society of this kind would do more for the cause of practical science than twenty associations composed of men, however distinguished, who are devoted only to the abstract—seeking out the causes of phenomenon and arranging them into harmonious systems. This practical association would, as has been done in England by the Engineers' Association, bring out more new discoveries than any other. The greatest and most important discoveries that have effected the greatest reforms in the social condition of our race, have been made by practical men.—While Professor Black of Glasgow was discovering and arranging in system the theory of steam, an humble mechanic, James Watt, employed to repair the philosophical apparatus of the College, made those improvements in the steam engine which have led to such gigantic reforms in commerce and the arts.—When the paper of the printer Franklin, describing his discoveries in electricity, was read before the Royal Society, the wise savans of that body heard it with shouts of laughter.—When George Stevenson was perfecting the locomotive, the sages of Oxford were adding some new theorem to Euler. We do not speak thus to glorify the mechanic, or artist, at the expense of those men or institutions, that have (too reverently we must say) been held up as the fathers and cycloids, of knowledge. We only claim the due share of honor for men whose occupations, somehow or other, are held to be collateral evidence of ignorance, because their hands are blackened with oil and oxide, instead of ink.

While saying so much in favor of the mechanical classes, we must tell them that we always will expect more from them for the promotion of the useful arts than from any other class. They have to learn by iron experience, and they are compelled in the very struggle for an existence to manufacture and improve in competition for the market. Therefore we would desire to see a strong, solid and powerful American association of mechanics, engineers and artists, for the encouragement and promotion of the useful arts, and ornamental design and decoration. Voluntary associations of great men think much of the title F. R. S.—let us in this country rear up an Institution of the people and have an order of merit for those who peculiarly distinguish themselves for discovery—nothing else—and let the honor be as impartial as the sun that shines for all. A sincere desire for the honor of our country and the glory of her people has prompted us at this time to give utterance to the foregoing remarks. We hope they will not fall like water on the arid sands, but on good soil to fertilize and bring forth an abundant harvest at some day not far distant, and our hearts be made to rejoice in beholding the establishment of such an association which will become famous in story "beloved at home, revered abroad."

The Best Form for Strength.

From experiments it has been deduced, that the strength of any material depends chiefly on its depth, or on that dimension which is in the direction of its strain. A bar of timber of one inch in breadth, and two inches in depth, is four times as strong as a bar of only one inch deep; and it is twice as strong as a bar two inches broad and one deep, that is, a joint or lever is always strongest when laid on its edge. Hence it follows, that the strongest joist that can be cut out of a round tree is not the one which has the greatest quantity of timber in it, but such that the product of its breadth by the square of its depth shall be the greatest possible. Again, from the same experiments it is found, that a hollow tube is stronger than a solid rod containing the same amount of matter. This property of hollow tubes is also accompanied with greater stiffness. Hence we find the bones of men and animals are formed hollow, which renders them incomparably stronger and stiffer, gives more room for the insertion of muscles, and makes them lighter and more agile, than if they were constructed of solid matter. In like manner the bones of birds, which are thinner than those of other animals, and the quills in their wings, acquire by their thinness the strength which is necessary, while they are so light as to give sufficient buoyancy to the animal in its flight to the aerial regions. Our engineers and carpenters have, of late, begun to imitate nature in this respect and now make axles and many other parts of machinery hollow.

Nature is the best rule to guide the mechanic and engineer in selecting the best forms to combine strength with lightness of material.

Important Patent Cases.---Morse vs. O'Reilly.

On a motion for an injunction on the Electric Telegraph used by Henry O'Reilly, as an intringement of Morse's patent, a most interesting examination into the merits and priority of Morse's invention was had and a decision made on the 9th inst, awarding an absolute injunction.

The trial was had in Frankfort, Kentucky, and eminent counsel were engaged on both sides. The utmost range of objection was taken by O'Reilly's counsel, some of which displayed not a little meanness, such as the objection that "part of the improvement claimed had been in use prior to a patent being secured, with the consent of the patentee." There is nothing that fills us with more indignation than an attempt to nullify the exclusive right of an inventor to his own invention, by the objection of "*using*" it before it was patented.

Evidence was adduced which proved Mr. Morse to have invented the telegraph as early as 1832, and perfected and exhibited it in 1836. The principal objection of the defendant was this, "that the instrument which they used was not an infringement; that it was a different machine invented by Messrs. Barnes & Zooks, and named the Columbian Telegraph." The judge (Monroe,) decided that it was the same in principle as that of Professor Morse. A number of objections were made to re-issues of Morse's patents, interpolations, &c., but the judge decided upon the principle of priority of invention, and suffered not small technicalities to nullify the rights of the inventor, so all objections were overruled.

Infringement of a Patent for a Machine to Saw Irregular Shapes.

On the 23d of last month there was decided by trial of a special jury before the Lord Chief Baron, in London, a case on the complaint of Hamilton versus Cochran, for infringement of his patent. The case was a singular one, both plaintiff and defendant are natives of the United States, and the defendant is somewhat known to the public as the young American who had met with some special notice by the British Board of Admiralty. and not long ago secured a patent for the United States for sawing irregular shapes. It seems, now, however, that Mr. Hamilton is the older inventor, having a patent for America, England and France—this patent was secured in England in 1843.

The Chief Baron summed up the evidence with great care—the principal witness on the side of the plaintiff being Mr. Carpmael, the famous Reporter of law cases to the Repository of Arts, and the partner of Moses Poole, so well known. There were four points submitted to the jury for decision. 1. Whether the English Agent of Mr. Hamilton was sufficiently possessed of the invention at the time he took out the patent. 2. Whether the machine of Hamilton was different from another for which a patent was granted in England in 1834. 3. Whether the invention was new and useful; and 4thly, whether the defendant (Cochran) had borrowed any part of the plaintiff's invention.

The jury retired and in fifteen minutes brought in a verdict for the plaintiff on all of the four points.

The four points submitted are worthy of the reader's attention.

Oat Meal.

The Journal de Quebec, speaking of the great abundance of the oat crops this year in Lower Canada, says that the present very low price of this article is not likely to be of long continuance, it having been proposed to export considerable quantities in the shape of meal to Ireland, as a subtitute for the failing potato crop. It contains much more nutritious matter than the potato, and was, before the introduction of wheat into many parts of Scotland, the principal food of a large number of the inhabitants.

There was a time when oat meal, milk, butter, cheese, venison and fish, constituted the whole food of the Irish and Scotts. They were then both a healthier and hardier race than they are now, but the times were different, the people were the defenders of the soil, now, the landlords consider them incumbrances.

As there is considerable of the phospate of lime in oats, it is an excellent food to harden and form the timbers of the human frame.

The Miners of Pennsylvania.

The Miners of Pennsylvania are preparing to solicit from the legislature, a law which shall give them a lien upon the coal mines until their labor is paid for. They are at present exposed to severe losses by the dishonesty of delinquent "master lumpers," and justice to honest industry, certainly demands the protection of such a law as they propose. Our New York mechanics have a lien upon all buildings which they aid in constructing. The principle is of universal application in all departments of industry, and should be a part of the common law in every state. Labor being the first great source of wealth, should rank next to life, in our laws and legislation.

There is no act so mean, contemptible and avaricious, and shows less of the man, than to rob the laborer of his hire, yet it is not a very uncommon vice among many of our people.

The patent case of Nevins vs McCollum, about a Cracker Machine, was neglected at this term of the Court by plaintiff's attorney.

What our Contemporaries think of us.

SCIENTIFIC AMERICAN.—No paper in the Union has accomplished so much for the cause of useful Science, and particularly, in the department of Mechanical Philosophy, as this most valuable journal has achieved. It is to this department, perhaps, more than to any other, that America owes her glory and her prosperity. And it is for this reason that we take delight in pointing out, in our humble sphere, to such of our readers as are ambitious of mechanical knowledge and improvement, an inexhaustible source of instruction. That source is to be found in the Scientific American. Whether we consider the beauty and accuracy of its diagrams, or the logical and mathematical clearness with which they are explained, we shall have fresh cause for continual admiration of the triumphs of skill and ingenuity. We are confident, that if our farmers, mechanics and machinists were once in the habit of taking this standard periodical, (which is remarkably cheap,) they would learn to think, that they could no more do without it, than they could dispense with the implements of their industry. For particulars of its characteristic features, see the advertisement of Munn & Co., in this paper.—*Litchfield, Conn., Republican.*

Sculpture and Monuments.

There is no display of works of taste and art that exhibit a kindly and grateful nature so well, as the erection of tablets and monuments to the well beloved departed. How many associations crowd upon the memory as we wander or sit by the tomb where sleeps some one enshrined in the affections of the heart. We like to see neat and beautiful *forget me nots* erected to the memory of departed friends. Last week we stopped at the Marble Yard on the corner of Bowery and Astor Place, to admire some beautiful and chaste sculpture (a favorite pastime with us,) and we were not a little gratified at the discovery of an old friend, Mr. Swezy, who has lately commenced and is now doing a thriving business there. For beautiful, chaste and appropriate work, those who employ him will not be disappointed in the faithfulness of execution and honesty in the performance of engagements.

Reduction in the Price of Gas.

The Commissioners of the Northern Liberties, Philadelphia, passed a resolution lately, inviting the directors of the gas company of that quarter to lower the price of gas. In consequence of this, the price for private consumers was reduced 50 cents per 1000 ft. That for public consumption, is for the present rated at $1,75 pr 1000 ft.

If the Gas Companies in this City had any fear of the future or love for the present race, they would go and do so likewise.

Please send me the first half of Vol. 3.

Many of our subscribers who commenced taking the Scientific American at the middle of Vol. 3. have sent to us requesting the first half, or Nos. from 1 to 26. To save answering all those requests by mail we hereby inform them and all others who may hereafter order that we cannot furnish the first half of Vol. 3, unless they order the last half also.

We have extra sets of the last half from No. 27 to 52 vol., 3 and can furnish all who may wish at the subscription price one dollar, or the whole volume complete for two dollars. Bound Vols. 3 also for sale at the office, price $2,75. All money received to pay for the first half of Vol. 3, will be credited to the continuation of Vol. 4.

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On Patent Laws.—Selling before the Issue of a Patent.

We have received another communication on this subject from a gentleman in Rochester, N. Y. It is somewhat long, but it covers the field in respect to a legal examination of the subject. We will commence the publication of it next week. On no other legal point respecting inventions have there been so many inquiries made of us, as on the right to sell and use previous to a patent being secured. It is perfectly plain to us, that the law allows an inventor to sell and use his invention (if not given away to the public two years before a patent is secured,) without invalidating the patent, nevertheless some of our legal gentlemen, judges among the number, have a different opinion, but which hinges upon "what constitutes giving an invention to the public." We therefore desire as much light as possible thrown upon this subject in order to excite attention and get Congress to make a plain law on this point, that will meet the case, so that judges of the Supreme Courts may not be sustained in decisions that savor of the unjust and unfair English Patent Laws.

We have also a number of communications on hand from legal gentlemen and inventors, in reference to reforms in our Patent Laws, which will appear in due season.

—

Messrs. Editors :—The very great importance to inventors of the topic above indicated, induces me to address to you the following remarks.

1. *Importance of the principle.*—Most inventors are under the absolute necessity of selling before application for a patent, in order to raise the necessary funds for the Patent Office. The expenses which must *precede* every application, in many instances leave the intending applicant no other way but the sale of the articles to enable him to proceed and mature his right by a patent. When to this we add the delay in the Office through an insufficient clerical force, an inventor would suffer attrocious wrong, if what is understood to be Judge Nelson's decision, were sustained.

2. *The action of Congress* in Patent legislation is enough to stir up the indignation of every honest man. They long refused to provide an adequate force to an institution which not only sustains itself but furnishes a large income to the government. Nothing but the plea of ignorance exempts them from the charge of actual fraud, for surely the citizens who have paid their money have a rightful claim that it be applied for their benefit.

In addition to these acts of omission, they seem to have acted with peurile weakness of indulgence towards a favored few.

3. *Remedy for this evil.*—In your number for July 15th last, you say that the people have the power to remedy legislative mischief, and are alone culpable if they send representatives who attend to party objects and not to their duty. This is true, but it is expedient to point out to them some practicable method by which they can bring their power into action. Let those in every Congressional District who are interested in patents, devote a portion of their time to *inform* their representatives of their rightful claims.

The injured inventors should *make a noise* and *tell* their grievances. You justly state that there is great moral force yet in our country, and if the truth were *made known*, the people would sympathise with the inventors and compel their public agent to do his duty. Let the agent first be made acquainted with the true state of things, and let every inventor refuse to vote for him, if he disregards his duty. Another method of procuring relief, would be to make your paper the organ of well considered amendments of the Patent Laws, previous to the next session of Congress.

I presume that every inventor takes your paper. If he can afford it and does not, he has but little reason to complain of injustice for he neglects the only public organ which represents and vindicates his rights. You are strangers to me, Messrs. Editors, but were I your personal enemy I would take your journal for my own advantage.

4. *Judge Nelson's decision.*—The only record I can find of this case is in the Journal of the Franklin Institute for 1845—3d series, page 30. The names of the parties were James Wilson vs. Austin Packard. It does not appear whether the case was carried up by appeal or not. It was decided in the Circuit Court of the U. S. for the District of New York. Cannot you, or some of your readers who reside in that district inform the public whether the case was appealed or not, and whether it has been sustained or over-ruled. It would be easy to ask the counsel of either party what was the final issue of the case, and whether the point decided be accurately stated in the following report; and finally whether there be any other and more reliable report of the case. It is by no means improbable that the ensuing statement may erroneously represent the language of the Judges. If so, it is of public importance that the error be rectified and that a correct abstract of the decision be published.

The account first states that the inventor sold a stove (the article patented) two months *prior to his application* for a patent, and that the Judges ruled that "if the inventor or his agent sells the invented article *in the usual way*, he abandons it to the public."—The meaning of this would seem to be that a sale in the *usual way* is a sale *without the declared right of personal reserve*, (as you have expressed it) and that *such* sale is an abandonment. I do not know that any one would have much reason to complain of the decision as thus qualified. But the account proceeds to say that the Court held that "the idea that the person can sell the the thing invented without an abandonment to the public is an absurdity." If the Court indeed held this language in an unlimited sense, every candid person must feel indignant at their assumption of legislative power. It was the very intention of Congress to give this power without abandonment.

I have now before me two letters of Judge Ruggles, then of U. S. Senate, and author of the existing Patent Law stating that such was their intention The first is dated January 29th, *before* the passsage of the Act. It says, "It cannot be doubted that the inventor may, *after* application, sell as many of the articles manufactured as he pleases. If the Bill passes, he may sell *before* application, claiming his right of invention, as not abandoning to the public." The second letter is April 28th, 1840, *after* the passage of the Act which is now the existing law. I make the following extract.

"It was intended by me when I drew the Bill to relieve the inventor from the effect of a *public use by any one* prior to the application for a patent by the inventor, limited, however, to two years."—The above letters were addressed to me, and at any time are subject to your order. Every person knows that a similar construction was put upon the act by the Patent Office, and, by every plain reader prior to this astounding decision. I cannot however, believe that a respectable court would so far *legislate* upon a Senate as to veto it upon the ground of its absurdity! The account proceeds to state finally that Judge Nelson charged the Jury that "the patent was equally avoided by the sale of the stove *after he had completed his* application, but *prior to the issuing of the patent*."

It is obvious that *if* the Judge used this language, it was a mere extra-judicial *dictum* not required by the state of facts, for the sale by Plaintiff was *before* application.

I should not have dwelt so long upon so loose a statement of a judicial decision, had not such great excitement, and so much unhappy feeling resulted from it, and were it not of *great importance* that a true report should be had of the actual decision. Permit me therefore, once more to request of some competent person in your district to enlighten the public in regard to the *precise point* decided, and whether there was an appeal. For one, I am free to say that I do not believe that *such* a decision as stated was ever made.

But if it were, and it should be sustained as good law, which is another point which I totally disbelieve, then patentees would be much worse off than they were under the old law.

I have now before me a letter from the former Commissioner, dated Oct 14, 1837, expressly asserting the power to make a sale *after* application and before issue of the patent.

Excuse the length of this communication, which seems demanded by the general dissatisfaction of the community at a reported decision which perhaps, and probably, was never actually made, as stated.

5. Would it not be gratifying to your readers, to inform them what Congress *actually did* in regard to the Patent Law during their recent session. I recollect that it was alleged in one of your papers, that they were about to legislate in favor of Professor Morse in such a manner as to restrict the privileges of the whole body of inventors, was this thing done? Surely the people interested must be stupid, if with all the forewarning they have received they slumber over their rights, and permit their public agents to be swayed to and fro by certain lobby characters who would disturb the order of the planetary system rather than that some favourite invention of their own should not be protected by special legislation.

Maine. J. M. O'B.

[On Monday last, the 25th, before Judges Betts and Nelson in this city, the case of the patent stove by James Wilson vs. Austin Packard, on the great question whether the patentee could himself sell, for two years before applying for a patent, and still retain his right to the patent, was brought up. On it the Judges were opposed in opinion, and so certify it, that the case may go to the Supreme Court of the United States. This then settles this question for the present. The decision of the Supreme Court will be in favor of the inventor undoubtedly.—Ed.

A Great Mechanic Gone.

On the 12th of last month died Mr. George Stephenson, the author of the railway system, the first great practical improver of the locomotive steam engine, the inventor (cotemporaneously with Davy) of the safety-lamp, and a man who displayed a vigorous and original genius in every thing which he undertook. He was born on the 9th of June, 1751, [was consequently, at the time of his death, in his 68th year] at a little village near Newcastle-on-Tyne, of parents in the humblest rank of life. His first occupation as a boy was attending to the steam engines used at the mouth of coal-pits. Eventually, he became a coal-viewer, or surveyor and overseer; and distinguished himself in the coal district by an improved mode of carrying on some great works at Darlington. In 1812, a committee which had investigated the priority of the claims of the discoverers of the safety-lamp gave him a public dinner at Newcastle, at which he was presented with a silver tankard and a purse of a thousand guineas. In returning thanks he announced his intention of devoting that sum to the education of his only son, Robert, at the University of Edinburgh. The history of his employment to construct the Stockton and Darlington, the first public railroad, and the Liverpool and Manchester, the first on which locomotive engines were introduced for the conveyance of passengers,—is well known. From the first journey of the locomotive built by the Stephensons over the railroad constructed by them, dates the actual commencement of the greatest mechanical revolution effected since the invention of the steam-engine by Watt. Though self-educated,—scarcely educated at all beyond reading and writing until he had attained manhood, Mr. Stephenson took every opportunity of impressing upon the young the advantages of science and literature. He related at a public dinner at the opening of the Birkenhead Docks how, in his early career, after the lobours of the day, he used to work in the evening at mending watches and clocks in order to earn enough to send his child to school. He was the founder and first president of the Society of Mechanical Engineers; and was never better pleased than when assisting by his advice and encouragement the ideas of ingenious artizans. In agriculture and horticulture he made many curious and successful experiments,—and the study of geology was a passion with him. It is feared that the intermittent fever of which he died was occasioned by the damp miasma arising from the fertilizers which he employed with great success in his hot houses. In a brief and hurried notice it is impossible to do justice to so remarkable a man. In the words of a cotemporary writer. "His mechanical genius was of that order that it may without exaggeration be asserted that if Watt had not previously invented the steam-engine he was capable of achieving it. Others before him had prepared the way; others since have contributed valuable improvements in detail; but to George Stephenson unquestionably belongs the proud title of the Author of the Railway System. He gathered the many threads of ingenuity and enterprise and weaved them into the wide-spreading net-work which promises, in its manifold extension, to envelope the whole world in bonds of commerce, civilization, and peace."

The Wild Man.

Dick Martin, Esq. being at Greenwich Fair, was led, by a very superfluous curiosity to enter a booth whose proprietor professed to exhibit "a wild man." There, assuredly he saw a very wild looking individual, with his head and face covered with a profusion of red, shaggy hair—a regular glib, nearly naked, and with a chain about his waist.—But Mr. Martin, upon observing that the savage seemed to display towards him some uncouth and uneasy signs of recognition, was induced to examine him more closely; and the result was, he recognised in the "wild man" one of his own tenants, and shouted out, with all the indignation becoming a legislator in favor of animals, "Why, then, Flaherty, you blackguard of the world, what is it you're about there, at all, making a beast of yourself entirely, entirely?" "Earning the rent for your honour," was Mr. Flaherty's propitiatory, and, to an Irish landlord, unanswerable, reply.

Action.

So far from complete inaction being perfect enjoyment, few sufferings are greater than that which the total absence of occupations generally induces. Count Calies, the celebrated French antiquarian, spent much time in engraving the plates which illustrated his valuable work. When his friends asked him why he worked so hard at such an almost mechanical operation, he said—"Je grave ne pas me pendre," I engrave lest I should hang myself. When Napoleon was slowly withering away from disease and ennui together, on the rock of St. Helena, it was told him that one of his old friends, an ex-colonel in the Italian army, was dead. What disease killed him?" asked Napoleon. "That of having nothing to do," it was answered.—"Enough," sighed Napoleon, "even had he been an emperor."

Origin of the Electric Telegraph.

Upwards of sixty years ago (or in 1787-89.) when Arthur Young was travelling in France, he met with a Monsieur Lomond, "a very ingenious and inventing mechanic," who had made a remarkable discovery in electricity.—"You write two or three words on a piece of paper," says Young; "he takes it with him into a room, and turns a machine enclosed in a cylindrical case at the top of which is an electrometer, a small fine pith ball. A wire connects with a similar cylinder and electrometer, in a distant apartment and his wife, by remarking the corresponding motions of the ball writes down the words they indicate, from which it appears he has formed an alphabet of motions. As the length of the wire makes no difference in the effect, a correspondence might be carried on at any distance. Whatever the use may be, the invention is beautiful."

Cause of Dark Color of the Skin.

Darkness of complexion has been attributed to the sun's power, from the age of Solomon to this day,—"Look not upon me, because I am black, because the sun hath looked upon me:"—and no doubt, that, to a certain degree, the opinion is well founded. The invisible rays in the solar beams, which change vegetable color, and have been employed with such remarkable effects in the Daguerreotype, act upon every substance upon which they fall, producing mysterious and wonderful changes in their molecular state, man not excepted.

"Strike the iron while it is hot," is a striking hot *truism*.

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TO CORRESPONDENTS.

"A. B. of Mass."—The machinery you speak of "with a transverse motion," could not be patented; other patents cover all the ground for transverse, dip and lift, &c.

"C. R. of Ohio."—There is a very good book on dyeing Wool and Cotton, especially cotton. It is called the Art of Dyeing. Its cost is $3,50, yet we would advise you to hire a good dyer for some time as we have seen no work on dyeing that describes correctly both the woolen and cotton processes, which are distinctly different.

"S. N. of Conn."—We will attend to your directions.

"J. E. of Ohio"—We received yours all correct. Mr. Stewart's engine will require to be longer in operation to prove and establish its superiority.

"H. P. of Pa."—The issues of Hotchkiss or any other wheel cannot discharge more water under the same head, than a throat of the same number of square inches.

"G. S. D. E. of Mass."—Your design for an ornamental stove, is certainly new and must be beautiful. We have never seen or heard of the same design being either used or patented.

"D. B. of Vt."—We have received your verses and will give them due consideration. There is no field so difficult of success as in poesy. You have the spirit-soaring imagination but it requires polishing, and no person can do this but the bard himself.

"J. A. H. of Me."—The best work for you to procure is "Scott's Engineers and Machinists Assistant," price $26; may be had at this office.

"S. C. T. of Geo."—We will furnish them *gratis* if you will inform us the numbers.

"E. R. B. of Wis."—Your funds are received.

"Goodwin & Co. of Ia., and W. H. Harris of Va"—Your engines and boilers were both shipped last Thursday week. The former was sent aboard the Mayflower, and directed to the care of B. and O. line of canal boats, and the latter was put aboard the schr. Vermillion, which sailed the next Monday morning for your port. The engine and boiler was sent in 8 parcels, all insured and freight paid to Richmond wharf, as per contract.

"C. K. of N. J."—You must have penned your letter too hastily. It is not possible to give an opinion upon any question unless it is plainly and clearly described. Your first diagram was much like Winder's and different from your present one. If you will reflect for a moment, you will perceive, that if you apply directly the power you employ to force up the water to the reservoirs, you will get all you want and save all the expence of pipes, reservoirs and friction.

"L. W. D. of N. Y."—It would no doubt bring your spring balance into notice to send it to the Fair, but we would not be able to do you justice in accepting the agency at present as we could not attend to the business.

"E. N. B. of N. J."—A slide rest for any lathe cannot be had ready made here, though one could be made to order.

"S. J. of N. H"—Your plan for a water wheel developes no new principles and you could not obtain a patent. $2, O. K.

"J. D. of Mass."—Your engine appears new, but whether it is of value we cannot say until it has been tested. It will be well for you to have an engraving of it published. We are now publishing in our paper a history of the Rotary Steam engine, with engravings, some of which you will find in every number, and if you like yours can be included among the rest.

"T. J. K. of Va"—The Locomotive, or the horizontal boiler, would be the best for your purpose. The 12 horse engine we had, is sold. We shall have some more before long. Gutta Percha bands are very good where there is no heat.

"B. P. of Conn."—The hard woolen waste is first torn by machinery like that used for cotton or for hair mattresses.

"H. R. of S. C."—Two machines for making Spokes, one for turning the rough and the other called the finisher, cost three hundred dollars each, sold at Newark, N. J—There are others somewhat less. One at $300 would perhaps answer your purpose. We cannot tell what is the price of Munsell's Morticing machine, but it would just answer you. He resides in Saratoga Co., this State.

"S. N. R. of H."—The Gutta Percha may remove your difficulties. It is very hard and yet has elasticity, but is very easily affected with heat. It can be made quite soft in boiling water, and when cold it is hard as horn. Armstrong & Co., Gutta Percha Warehouse, William st New York, is the direction.

"A. B. of Ct."—There can be no doubt of a patent in your case.

"A. Mc. K of N. Y. and A. S M. of Vt."—Your specifications were sent to your respective addresses for your signatures last week. Hope you received them duly and will return them as soon as possible.

☞ Many of our Correspondents to whom a reply is due must excuse us for non attention to their requests till some future number. We have been unusually hurried for a few weeks past, and the communications and letters of enquiry have poured in upon us in such torrents that we cannot answer you all for several days.

We have not forgotten any of you however, and your respective requests shall receive attention as soon as possible, probably in the next number, and some of you previous to the next issue, by mail

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The undersigned has the exclusive right to vend, use, and manufacture "Morse's Air Distributor," in the state of New York, to whom application may be made.

☞ Infringements on this patent will be prosecuted, and the rights secured by the letters patent rigidly enforced.

Lockport, 8th mo. 28, 1848. L. A. SPALDING.

CERTIFICATES.

Lockport, N. Y. Sept. 18, 1848

I hereby cerify that I have one of Morse & Brother's Air Distributors, in my Steam Saw Mill at this place. My fire place is 11 feet by four feet 9 inches, under 3 flue Boilers, 12 feet long by 40 inches diameter. I have 2 engines, the cylinders are, one of 12 and one of 10 inch diameter, and 2 feet stroke.

The sawdust, bark and clips from the oak plank I am sawing (without any cord wood or slabs) is all sufficient for driving my two Gang saws for plank, and five gang of Saws for sawing stone.

I have a superior chimney. The draft is perfect. My engineer and Firemen say, they get up steam in about half the time they formerly took. To me the saving is great—any one can calculate for himself. GEO. REYNALE.

To L. A. Spalding.

We have been running a Steam Engine for some years, to propel machinery for driving a tannery with a large bark Mill, two sets heavy Hide Mills, four Pumps, one Roller, two Last Machines for Turning Lasts, two Machines for finishing Lasts, and one Circular Saw for sawing timber—the Engine supposed to be fourteen horse power—in which we used two cords of wood (hard) per day. Thirty-three days ago to-day we were induced to try Morse's Patent Grates, or Air Distributor, and to our entire satisfaction. We find a saving of at least 4 dollars per day in using Tan. We find no trouble in raising all the Steam we want, with Tan. Since we have put in your Patent Burner, we have not used a stick of wood, and we cheerfully recommend them to any, and to all who wish to save wood, where Saw-dust, Tan or coal may be used. N. CASE & CO.

Buffalo, June 19, 1848 s23 4t

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TALBOT'S PATENT BLIND HINGE.

THE undersigned having become interested in the manufacture and sale of the above article, would state that their facilities are such, that they can supply any demand at short notice. This hinge, having stood the test of two years trial, has fully established itself as a useful and important invention, being all that can be desired for blind trimmings, as the blind is managed entirely from the inside of the house without raising the sash,—completely locks it, and prevents all unpleasant noise of the blind by wind.

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au8 SAMUEL C. HILLS, Patent Agent.

Johnson & Robbins,
Consulting Engineers and Counsellors for Patentees.

Office on F street, opposite Patent Office, Washington, D. C. j17 tf

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LEAVITT & M'DANIEL, Concord, N. H., make of the best cast steel the following Saws:—

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The trade supplied on liberal terms. s23 2m*

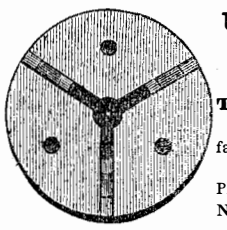
Judson's Stave Dressing Machine.

THIS Machine, on which Letters Patent were granted May 1st, 1847, has been in successful operation for the past year, and hundreds of thousands of staves have been dressed by it. It is warranted to dress the same quantity of staves with as little power as any that can be started, also leave the full thickness on thin edges and thin ends, and conform as near to the crooks and twists of the timber as can be desired. The jointing of the machine which accompanies it, has been subjected to the severest test, and pronounced superior to that performed by hand. Application for a patent on the Jointer has been made.

Large quantities of Hogsheads and Shooks made with staves dressed and jointed with their machines have been sold and used to the entire satisfaction of the purchasers.

For rights and machines address the proprietors at their Manufactory, Artizan street, New Haven, Connecticut, where machines in full operation may be seen. JUDSON & PARDEE.

New Haven, July 17, 1748. jy29 3m*



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From 1 1-4 to 6 inches diameter, and any length, not exceeding 17 feet.

THESE Tubes are of the same quality and manufacture as those extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER, Patentee,
d26 28 Platt street, New York

Johnson's Improved Shingle Machine.

THE Subscriber having received Letters Patent for an improvement in the Shingle Machine, is now ready to furnish them at short notice, and he would request all those who want a good machine for sawing shingles, to call on him and examine the improvements he has made, as one eighth more shingles can be sawed in the same given time than by any other machine now in use.

Augusta, Maine, Oct. 1, 1847. J. G. JOHNSON.

To Mill Owners.

HAVILAND & TUTTLE'S Patent Centre Vent Pressure Water Wheel.—These wheels are now in successful operation in many towns in Maine, Massachusetts, and Rhode Island, and are found to surpass in power and facility of adaptation any water wheel now in use. This wheel was awarded the silver medal at the Fair of the American Institute recently held in New York and a diploma at the Mechanics' Fair in Boston.

The wheels are manufactured and for sale by the FULTON IRON FOUNDRY CO., South Boston, Mass.,—where the wheels can be seen and any information concerning them had.

Patent Rights for different States, Counties, &c. for sale, as above. m25 6m*

TO IRON FOUNDERS.

Pulverized bituminous, or sea-coal Facing, an approved article for mixing with moulding sand to make the sand leave the castings easily. Also fine bolted charcoal and anthracite coal dust, soapstone, and black lead on hand in barrels, and for sale by G. O. ROBERTSON,

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For the Scientific American.

New Chemical Law.

No. 2.

The following are the outlines of this chemical law given in as brief a manner as possible.

Conceive the existence of a gas, constituted of a vast number of particles either simple or compound, and each particle situated equidistant from each other. Now by this law these particles either simple or compound, constituting the gas, may under peculiar condition unite with each other, to form compound particles. Thus if the original atoms unite by pairs, then the gas or solid which these double particles constitute, will differ from the original gas. If three original atoms unite, the substance formed will differ from the two former, and in this manner, four, five, six and upward, may unite, forming different substances at each union.

Perhaps this may be still better understood, by supposing the existence of a gas, or portion of a gas, consisting for instance of 120 simple particles, like shot. Now by this law, these prrticles may unite with each other by pairs for instance, forming clusters or compound atoms consisting of two original atoms combined, the gas perhaps still retaining its physical properties, although with but one half the number of the original atoms. If three particles unite or aggregate, then it is evident that the substance or gas will consist of but 40 aggregated atoms, as each aggregated atom is made up by the union of three original atoms with each other. In this manner any uumber of atoms may unite and at each union a different substance will be the result. It makes no difference whether the original atom be either simple or compound, the result is the same. All substances formed by particles thus aggregated must possess the following propeties.

1st. The specific gravities of the vapour or gases, of all substances, comprised in the same aggregated series, when taken at the same temperature, are directly proportional to their atomic weights.

2nd. The specific gravity of all substances aggregated from the same radial increase with the series.

3rd. The boiling points of all substances, aggregated from the same radial, also increase with the series.

4th. The equivalent combining volume of all substances aggregated from the same radial are equal.

5th. The power of the substances to conduct heat also increases with the series.

6th. The power of the substances to conduct electricity increase with the series.

7th. The number of atoms of Oxygen, required to acidify any substance, belonging to the same aggregate series are equal.

8th. All those substances belonging to the same aggregate science, are possessed of similar chemical properties. They are the more similar, the nearer the substances are situated to each other in the series, but grow more dissimilar as the distance between them increases. Thus the substance represented by an aggregation of two atoms, is similar to a combination of three atoms, but not as similar to a combination of four. It is in this manner, that the first substance of an aggregated series may be totally different in its chemical properties from the last.

9th. If the first of an aggregated series be a gas, then as the series increase, it will grow denser, and may become a fluid, and farther still, a solid.

10th. All substances comprised in an aggregated series, are electro-negative to all those above them.

11th. In an aggregated series, all those substances situated the highest in the list, generally have the least affinity for any particular substance.

12th. In fact whatever property a substance may possess, it is either increased or diminished by this law.

This regularity of increase and decrease, is not confined merely to an aggregated series, but extends to their compound with other substances according to the following conditions.

1st. The specific gravity of the compounds formed by any aggregated series, with any particular substance, will either increase or decrease, in a regular manner, depending upon the specific gravity of the substance uniting with the series. If the uniting substance possesses a great specific gravity, then the specific gravity of the compound, will decrease as the series increase, otherwise it will increase with the series.

2nd. The boiling points of the compounds of an aggregated series, with any particular substance, increase with the series.

The above two properties of the compound of an aggregated series, with a particular substance, are sufficient for all purposes of application, since if more were introduced, it might render it apparently complex. The same decrease or increase of all other properties, will be found to exist upon the examination. They must also possess similar chemical properties, like an aggregated series. The above conditions are sufficient to test the truth of this law. The application of course follows, and if all the results as required by the above conditions, do actually exist, then must its truth be admitted.

Bridgeport, Conn. S. N.

An excellent plan for Preparing Glue.

Mr. Editor.—I hereby send you a plan of preparing and keeping Glue in solution, which I have found to be truly good.

To any quantity of glue use common whiskey instead of water. Put both together in a bottle, cork it tight and set it past for three or four days, when it will be fit for use without the application of heat. Glue thus prepared, will keep for years and is at all times fit for use, except in very cold weather, when it should be set in warm water before using. To obviate the difficulty of the stopper getting tight by the glue drying in the mouth of the vessel, I use a tin vessel with the cover fitting tight on the outside to prevent the escape of the spirit by evaporization.

Greenville, S. C. J. L. P.

Priming for Percussion Guns.

A mixture of 100 grains of oxymuriate of potasse, with 12 of sulphur is much preferable to either fulminating silver, or fulminating quicksilver, for priming. It is not so liable to accidental explosion, it leaves behind it less acid matter, and does not corrode the iron so rapidly; and, contrary to what takes place with fulminating quicksilver, its explosion is not followed by a deposition of moisture. The facility and certainty of the explosion is the same in both.

A mixture of 100 grains of chlorate of potash, with 24 of salteptre, 36 of sulphur, and 14 of lycopodium, is not nearly so efficacious as the first; although this is chiefly a consequence of the ordinary construction of the touch-hole. The best method of filling the copper caps is, to mix up the explosive compound into a thick liquid, with any adhesive solution or tincture, and, by means of a hair pencil, to introduce a large drop of this mixture into the bottom of each cap.

Another preparation for the priming powder for percursion guns, is three drams of regulus of antimony, and one dram of oxymuriate of potasse. On account of the corrosive properties of the oxymuriate of potash, it is advisable to use the smallest possible quantity that will be certain of ignition; the above ingredient, if well compounded from a percussion powder, will fire with the greatest certainty.

One great objection to the stronger preparations for priming is the great and sudden corrosion produced after firing; so violent is this, that should the interval between firing much exceed an hour, the touch-hole is not unfrequently completely closed by a strong rust.

Artificial Eyes for Horses.

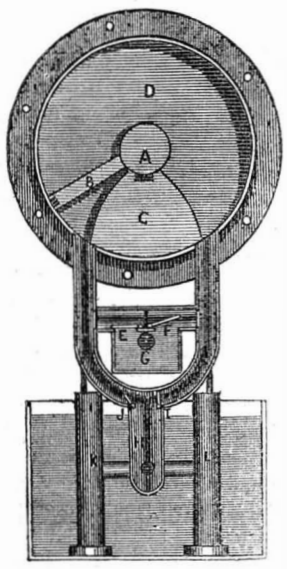
Dr. Bristol, of Lockport, Niagara Co. N. Y. advertises to make artificial eyes for horses.—He says, although not in his line, he will take orders from persons having valuable horses deformed by loss of an eye.

History of the Rotary Engine.

Prepared expressly for the Scientific American.

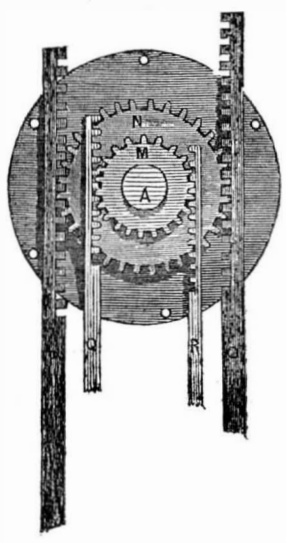
SEMI-ROTATION ENGINE.

Fig 3.



We give two views of a semi rotation engine invented by Watt, and included in his patents of 1782, and although it was never carried into execution yet it will be found by the description to be very ingenious, and must have conveyed some hints to the first builder of the vibrating kind. The same letters indicate like parts on all the figures.

Fig 4.



D, is the interior of the cylinder. It is fitted with a piston B. C is a projection of metal extending from the circumference to the axle A. Packing is introduced between this projection and the axle, so as to prevent the steam from escaping between them. E F are two valves which admit steam from the steam pipe G into the cylinder on each side of C alternately. I J are two valves acting in conjunction with E F, so as to open or shut off a communicaton with the condensers L K through the pipe H at a proper time. Levers are attached to the rods by which these valves are worked, from tappets on the pump rods R Q.

Steam is admitted from the boiler through the pipe G into tho steam chest, and finding the valve F open, rushes up the pipe, and so into the cylinder between the piston and stop C. The piston, receding from the pressure, drives the air in the cylinder through the other pipe, and down through the valve J, into the condenser, whence it escapes by the pump L. It continues revolving until it comes in contact with the other side of C, when it is stopped; but previous to this the valves F and J have been shut by their respective levers, whilst E and I, have been opened. The steam has now access through E to the other side of the piston, and turns in the contrary direction; the steam which last performed its office escaping down through I to the condenser. The first operation is then repeated, reversing the motion of the piston as soon as, or before it comes in contact with the other side of E. N M are two toothed wheels attached to the axle A, which work (as shewn) by racks, the pump rods O P, and the smaller pump rods Q R. The former O P, are supposed to draw water from a mine, bnt the smaller ones only work the condensing pumps K L.

It would hardly be an objection that the piston would strike against the stop C and thereby shake itself to pieces: for here, as an equable motion is not required like a rotary engine, the speed might (as in all pumping engines which were liable to the same objection) be gradually retarded, so that the impetus would be destroyed before it came in contact with the stop. Perhaps the most solid objection would be that of the packing requiring more care than a common workman, such as generally attends to steam engines, would be able or willing to bestow: It would have been extremely portable and cheap, would have occupied very little room and the friction would have been comparitively trifling.

To Weld Iron, Steel and Sheet Iron.

In an earthen vessel melt borax, and add to it 1-10th of sal-ammoniac. When these ingredients are properly fused and mixed, pour them out upon an iron plate and let them cool. There is thus obtained a glassy matter, to which is to be added an equal quantity of quick lime. The iron or steel which are to be soldered are first heated to redness; then this compound, first reduced to powder, is laid upon them—the composition melts and runs like sealing wax; the pieces are then replaced in the fire, taking care to heat them at a temperature far below that usually employed in welding; they are then withdrawn and hammered, and the surfaces will be found to be thus perfectly united. The author who is a Frenchman, asserts that this process, which may be applied to welding sheet iron tubes, never fails.

A valuable series of petrifactions, purely silicious, gathered near Cairo in Egypt, have been presented by Prof. Charles E. Anthon to St. John's College, Annapolis, (Md.) The original structure of the trees is remarkably defined in these curiosities.

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